State of Utah

Department of
Environmental Quality

Dianne R. Nielson, Ph.D.
Executive Director

DIVISION OF AIR QUALITY
Richard W. Sprott
Director

OLENE S. WALKER
Governor

GAYLE F. McKEACHNIE
Lieutenant Governor

Site ID: 10348

Title V Operating Permit

PERMIT NUMBER: 3500044002(DRAFT)
DATE OF PERMIT: (Assigned in Final Permit)
Date of Last Revision: (Assigned in Final Permit)

This Operating Permit is issued to, and applies to the following:

Name of Permittee:

Murray City Power Department
153 W 4800 S
Murray, UT 84107

Permitted Location:

Electrical Generation Plant
157 W 4800 S
Murray, UT 84107

UTM coordinates: 4,501,957 meters Northing, 424,468 meters Easting
SIC code: 4911

ABSTRACT

The Murray City Power (MCP) Plant is a peaking, emergency and stand-by electric generation station. The annual power production varies upon the demand for peaking, emergency and stand-by needs. The plant consists of three 14.3 MW natural gas turbines. A continuous emissions monitoring system has been installed on the three gas turbines. MCP is a major source of CO emissions. 40 CFR 60, Subpart GG applies to this source.

UTAH AIR QUALITY BOARD

By:

Richard W. Sprott, Executive Secretary

Prepared By:

James Chapman

Operating Permit History

3/11/1999 - Permit issued	Action initiated by an initial operating permit application	
5/8/2001 -Permit modified	Action initiated by a significant operating permit modification	to incorporate requirements from new approval order DAQE-126-01 issued February 9, 2001.
6/12/2001 -Permit modified	Action initiated by an administrative amendment (initiated by source)	to clarify the averaging time for the NO_x CEM PPM limit and the CO PPM limit.
11/16/2004 - Permit drafted	Action initiated by a renewal of an operating permit	

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Issued under authority of Utah Code Ann. Section 19-2-104 and 19-2-109.1, and in accordance with Utah Administrative Code R307-415 Operating Permit Requirements.

All definitions, terms and abbreviations used in this permit conform to those used in Utah Administrative Code R307-101 and R307-415 (Rules), and 40 Code of Federal Regulations (CFR), except as otherwise defined in this permit. Unless noted otherwise, references cited in the permit conditions refer to the Rules.

Where a permit condition in Section I, General Provisions, partially recites or summarizes an applicable rule, the full text of the applicable portion of the rule shall govern interpretations of the requirements of the rule. In the case of a conflict between the Rules and the permit terms and conditions of Section II, Special Provisions, the permit terms and conditions of Section II shall govern except as noted in Provision I.M, Permit Shield.

Section I: General Provisions

I.A. **Federal Enforcement.**

All terms and conditions in this permit, including those provisions designed to limit the potential to emit, are enforceable by the EPA and citizens under the Clean Air Act of 1990 (CAA) except those terms and conditions that are specifically designated as "State Requirements". (R307-415-6b)

I.B. **Permitted Activity(ies).**

Except as provided in R307-415-7b(1), the permittee may not operate except in compliance with this permit. (See also Provision I.E, Application Shield)

I.C. **Duty to Comply.**

I.C.1 The permittee must comply with all conditions of the operating permit. Any permit noncompliance constitutes a violation of the Air Conservation Act and is grounds for any of the following: enforcement action; permit termination; revocation and reissuance; modification; or denial of a permit renewal application. (R307-415-6a(6)(a))

I.C.2 It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (R307-415-6a(6)(b))

I.C.3 The permittee shall furnish to the Executive Secretary, within a reasonable time, any information that the Executive Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Executive Secretary copies of records required to be kept by this permit or, for information claimed to be confidential, the permittee may furnish such records directly to the EPA along with a claim of confidentiality. (R307-415-6a(6)(e))

I.C.4 This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance shall not stay any permit condition, except as provided under R307-415-7f(1) for minor permit modifications. (R307-415-6a(6)(c))

I.D. **Permit Expiration and Renewal.**

I.D.1 **This permit is issued for a fixed term of five years and expires on (Assigned in Final Permit)**. (R307-415-6a(2))

I.D.2 Application for renewal of this permit is due by (Assigned in Final Permit). An application may be submitted early for any reason. (R307-415-5a(1)(c))

I.D.3 An application for renewal submitted after the due date listed in I.D.2 above shall be accepted for processing, but shall not be considered a timely application and shall not relieve the permittee of any enforcement actions resulting from submitting a late application. (R307-415-5a(5))

I.D.4 Permit expiration terminates the permittee's right to operate unless a timely and complete renewal application is submitted consistent with R307-415-7b (see also Provision I.E, Application Shield) and R307-415-5a(1)(c) (see also Provision I.D.2). (R307-415-7c(2))

I.E. **Application Shield.**

If the permittee submits a timely and complete application for renewal, the permittee's failure to have an operating permit will not be a violation of R307-415, until the Executive Secretary takes final action on the permit renewal application. In such case, the terms and conditions of this permit shall remain in force until permit renewal or denial. This protection shall cease to apply if, subsequent to the completeness determination required pursuant to R307-415-7a(3), and as required by R307-415-5a(2), the applicant fails to submit by the deadline specified in writing by the Executive Secretary any additional information identified as being needed to process the application. (R307-415-7b(2))

I.F. **Severability.**

In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force. (R307-415-6a(5))

I.G. **Permit Fee.**

I.G.1 The permittee shall pay an annual emission fee to the Executive Secretary consistent with R307-415-9. (R307-415-6a(7))

I.G.2 The emission fee shall be due on October 1 of each calendar year or 45 days after the source receives notice of the amount of the fee, whichever is later. (R307-415-9(4)(a))

I.H. **No Property Rights.**

This permit does not convey any property rights of any sort, or any exclusive privilege. (R307-415-6a(6)(d))

I.I. **Revision Exception.**

No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit. (R307-415-6a(8))

I.J. **Inspection and Entry.**

I.J.1 Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Executive Secretary or an authorized representative to perform any of the following:

I.J.1.a Enter upon the permittee's premises where the source is located or emissions related activity is conducted, or where records are kept under the conditions of this permit. (R307-415-6c(2)(a))

I.J.1.b Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit. (R307-415-6c(2)(b))

I.J.1.c Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practice, or operation regulated or required under this permit. (R307-415-6c(2)(c))

I.J.1.d Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with this permit or applicable requirements. (R307-415-6c(2)(d))

I.J.2 Any claims of confidentiality made on the information obtained during an inspection shall be made pursuant to Utah Code Ann. Section 19-1-306. (R307-415-6c(2)(e))

I.K. **Certification.**

Any application form, report, or compliance certification submitted pursuant to this permit shall contain certification as to its truth, accuracy, and completeness, by a responsible official as defined in R307-415-3. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. (R307-415-5d)

I.L. **Compliance Certification.**

I.L.1 Permittee shall submit to the Executive Secretary an annual compliance certification, certifying compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. This certification shall be submitted no later than **September 30, 2001** and that date each year following until this permit expires. The certification shall include all the following (permittee may cross-reference this permit or previous reports): (R307-415-6c(5))

I.L.1.a The identification of each term or condition of this permit that is the basis of the certification;

I.L.1.b The identification of the methods or other means used by the permittee for determining the compliance status with each term and condition during the certification period. Such methods and other means shall include, at a minimum, the monitoring and related recordkeeping and reporting requirements in this permit. If necessary, the permittee also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Act, which prohibits knowingly making a false certification or omitting material information;

I.L.1.c The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was

continuous or intermittent. The certification shall be based on the method or means designated in Provision I.L.1.b. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 occurred; and

I.L.1.d Such other facts as the Executive Secretary may require to determine the compliance status.

I.L.2 The permittee shall also submit all compliance certifications to the EPA, Region VIII, at the following address or to such other address as may be required by the Executive Secretary: (R307-415-6c(5)(d))

Office of Enforcement, Compliance and Environmental Justice
(mail code 8ENF)
EPA, Region VIII
999 18th Street, Suite 300
Denver, CO 80202-2466

I.M. **Permit Shield.**

I.M.1 Compliance with the provisions of this permit shall be deemed compliance with any applicable requirements as of the date of this permit, provided that:

I.M.1.a Such applicable requirements are included and are specifically identified in this permit, or (R307-415-6f(1)(a))

I.M.1.b Those requirements not applicable to the source are specifically identified and listed in this permit. (R307-415-6f(1)(b))

I.M.2 Nothing in this permit shall alter or affect any of the following:

I.M.2.a The emergency provisions of Utah Code Ann. Section 19-1-202 and Section 19-2-112, and the provisions of the CAA Section 303. (R307-415-6f(3)(a))

I.M.2.b The liability of the owner or operator of the source for any violation of applicable requirements under Utah Code Ann. Section 19-2-107(2)(g) and Section 19-2-110 prior to or at the time of issuance of this permit. (R307-415-6f(3)(b)

I.M.2.c The applicable requirements of the Acid Rain Program, consistent with the CAA Section 408(a). (R307-415-6f(3)(c))

I.M.2.d The ability of the Executive Secretary to obtain information from the source under Utah Code Ann. Section 19-2-120, and the ability of the EPA to obtain information from the source under the CAA Section 114. (R307-415-6f(3)(d))

I.N. **Emergency Provision.**

I.N.1 An “emergency” is any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate

corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. (R307-415-6g(1))

I.N.2 An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the affirmative defense is demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

I.N.2.a An emergency occurred and the permittee can identify the causes of the emergency. (R307-415-6g(3)(a))

I.N.2.b The permitted facility was at the time being properly operated. (R307-415-6g(3)(b))

I.N.2.c During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in this permit. (R307-415-6g(3)(c))

I.N.2.d The permittee submitted notice of the emergency to the Executive Secretary within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the requirement of Provision I.S.2.c below. (R307-415-6g(3)(d))

I.N.3 In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof. (R307-415-6g(4))

I.N.4 This emergency provision is in addition to any emergency or upset provision contained in any other section of this permit. (R307-415-6g(5))

I.O. **Operational Flexibility.**

Operational flexibility is governed by R307-415-7d(1).

I.P. **Off-permit Changes.**

Off-permit changes are governed by R307-415-7d(2).

I.Q. **Administrative Permit Amendments.**

Administrative permit amendments are governed by R307-415-7e.

I.R. **Permit Modifications.**

Permit modifications are governed by R307-415-7f.

I.S. **Records and Reporting.**

I.S.1 Records.

I.S.1.a The records of all required monitoring data and support information shall be retained by the permittee for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-charts or appropriate recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. (R307-415-6a(3)(b)(ii)

I.S.1.b For all monitoring requirements described in Section II, Special Provisions, the source shall record the following information, where applicable: (R307-415-6a(3)(b)(i))

I.S.1.b.1 The date, place as defined in this permit, and time of sampling or measurement.

I.S.1.b.2 The date analyses were performed.

I.S.1.b.3 The company or entity that performed the analyses.

I.S.1.b.4 The analytical techniques or methods used.

I.S.1.b.5 The results of such analyses.

I.S.1.b.6 The operating conditions as existing at the time of sampling or measurement.

I.S.1.c Additional record keeping requirements, if any, are described in Section II, Special Provisions.

I.S.2 Reports.

I.S.2.a Monitoring reports shall be submitted to the Executive Secretary every six months, or more frequently if specified in Section II. All instances of deviation from permit requirements shall be clearly identified in the reports. (R307-415-6a(3)(c)(i))

I.S.2.b All reports submitted pursuant to Provision I.S.2.a shall be certified by a responsible official in accordance with Provision I.K of this permit. (R307-415-6a(3)(c)(i)

I.S.2.c The Executive Secretary shall be notified promptly of any deviations from permit requirements including those attributable to upset conditions as defined in this permit, the probable cause of such deviations, and any corrective actions or preventative measures taken. **Prompt, as used in this condition, shall be defined as written notification within 14 days**. Deviations from permit requirements due to unavoidable breakdowns shall be reported in accordance with the provisions of R307-107. (R307-415-6a(3)(c)(ii))

I.S.3 Notification Addresses.

I.S.3.a All reports, notifications, or other submissions required by this permit to be submitted to the Executive Secretary are to be sent to the following address or to such other address as may be required by the Executive Secretary:

Utah Division of Air Quality
P.O. Box 144820
Salt Lake City, UT 84114-4820
Phone: 801-536-4000

I.S.3.b All reports, notifications or other submissions required by this permit to be submitted to the EPA should be sent to one of the following addresses or to such other address as may be required by the Executive Secretary:

For annual compliance certifications	For reports, notifications, or other correspondence related to permit modifications, applications, etc.
Environmental Protection Agency, Region VIII Office of Enforcement, Compliance and Environmental Justice (mail code 8ENF) 999 18th Street, Suite 300 Denver, CO 80202-2466	Environmental Protection Agency, Region VIII Office of Partnerships & Regulatory Assistance Air & Radiation Program (mail code 8P-AR) 999 18th Street, Suite 300 Denver, CO 80202-2466 Phone: 303-312-6440

I.T. **Reopening for Cause.**

I.T.1 A permit shall be reopened and revised under any of the following circumstances:

I.T.1.a New applicable requirements become applicable to the permittee and there is a remaining permit term of three or more years. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire, unless the terms and conditions of this permit have been extended pursuant to R307-415-7c(3), application shield. (R307-415-7g(1)(a))

I.T.1.b The Executive Secretary or EPA determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit. (R307-415-7g(1)(c))

I.T.1.c EPA or the Executive Secretary determines that this permit must be revised or revoked to assure compliance with applicable requirements. (R307-415-7g(1)(d))

I.T.1.d Additional applicable requirements are to become effective before the renewal date of this permit and are in conflict with existing permit conditions. (R307-415-7g(1)(e))

I.T.2 Proceedings to reopen and issue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. (R307-415-7g(2))

I.U. **Inventory Requirements.**

Emission inventories shall be submitted in accordance with the procedures of R307-150, Emission Inventories. (R307-150)

Section II: SPECIAL PROVISIONS

II.A. **Emission Unit(s) Permitted to Discharge Air Contaminants.**

(R307-415-4(3)(a) and R307-415-4(4))

II.A.1 **Three 14.3 MW Gas Turbines** (designated as Unit Gas Turbines)
Unit Description: Includes Units 1 GT, 2 GT, and 3 GT

II.A.2 **Gas Turbine** (designated as Unit 1 GT)
Unit Description: 14.3 MW turbine at 100% power generation factor (ISO Standard day conditions), Natural gas only. Low NO_x burners. Exempt Unit for Title IV.

II.A.3 **Gas Turbine** (designated as Unit 2 GT)
Unit Description: 14.3 MW turbine at 100% power generation factor (ISO Standard day conditions), Natural gas only. Low NO_x burners. Exempt Unit for Title IV.

II.A.4 **Gas Turbine** (designated as Unit 3 GT)
Unit Description: 14.3 MW turbine at 100% power generation factor (ISO Standard day conditions), Natural gas only. Low NO_x burners. Exempt Unit for Title IV.

II.A.5 **Black Start Generator** (designated as Unit 11)
Unit Description: Fuel Oil #1 or #2 Only, 1,000 bhp generator.

II.A.6 **Misc. Fuel Tanks** (designated as Unit 13)
Unit Description: Includes three tanks; 12,000 gallon, 8,000 gallon and 1,000 gallon diesel and gasoline fuel tanks. No unit-specific applicable requirements.

II.A.7 **Propane Tanks** (designated as Unit 14)
Unit Description: Three propane tanks used for onsite fuel. No unit-specific applicable requirements.

II.B. **Requirements and limitations.**

The following emission limitations, standards, and operational limitations apply to the permitted facility as indicated: (R307-415-6a(1))

II.B.1 **Conditions on permitted source (Source-wide)**

II.B.1.a **Condition:**

Emissions of NO_x shall be no greater than 98.9 tons per 12-month rolling period. [Authority granted under R307-401-6(1) [BACT]; condition originated in DAQE-AN0348004-04]

II.B.1.a.1 **Monitoring:**

The plantwide NO_x emissions shall be determined by a rolling 12-month total. Within the first 20 days of each month a new 12-month total shall be calculated using data from the previous 12 months.

1. The emissions from the Black Start Generator shall be calculated using the following equation:

Monthly Emission Rate Calculation:

M=(hrs of operation/month)(1000hp) (0.024 lb NO_x/bhp-hr) (1ton/2000lbs)

2. Emissions from the gas turbine(s) shall be calculated using the following equations and CEMS data for NO_x:

Daily Rate Calculation:

X* = average hourly emission rate for each turbine in lbs/hr.
T* = time each turbine ran during the day in hours
D = daily average output of pollutant in lbs/day
Time when turbine is not operating shall not be included in the average.

D = (X) x (T)

Monthly Rate Calculation:

M = monthly output of pollutant in lbs/month
M = The summation of D over the previous month

Annual Rate Calculation:

A = annual output of pollutant in tons per rolling 12-month period
A = the summation of M (over the previous 12-months)/ 2000 lbs/ton

* CEMS recorded data.

To determine the NO_x mass emissions (lbs/hr) for the calculations in this condition the F factor of 40 CFR 60 Appendix A, Method 20 shall be used in conjunction with the data provided by the diluents monitor to determine the stack gas flow rate of each turbine.

For BACT limit only: During periods of CEMS breakdown, the average emission rate in units of lbs/kW-hr, for each turbine during the previous 168 operating hours prior to the breakdown, shall be used in the calculation of annual emission rate in this condition. If the breakdown exceeds two weeks, the emission rate used in the calculation for the third week shall be 110% of the prior 168 operating hours emission rate. The emission rate for all the downtime in excess of three weeks shall be 120% of the prior 168 operating hours emission rate. Results of monitoring shall be maintained in accordance with Provision I.S.1 of this permit.

Emissions totals from the three natural gas turbines and Black Start Generator should be kept in table format, listing month, operating hours, and emissions, for each individual engine. CEMS record keeping shall be performed in accordance with UAC, R307-170.

II.B.1.a.2 **Recordkeeping:**

The permittee shall keep the records specified in R307-170-8 and any additional records required by provision I.S.1 of this permit. These records shall be maintained in accordance with Provision I.S.1.

II.B.1.a.3 **Reporting:**

The permittee shall comply with the reporting provisions in R307-170-9 and any additional reporting provisions contained in Section I of this permit.

The quarterly reports required in R307-170-9 are considered prompt notification of permit deviations required in Provision I.S.2.c of this permit if all information required by Provision I.S.2.c is included in the report.

II.B.1.b **Condition:**

At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate any permitted plant equipment, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All installations and facilities authorized by this permit shall be adequately and properly maintained. Maintenance records shall be maintained while the plant is in operation. All pollution control equipment shall be installed, maintained, and operated properly. Instructions from the vendor or established maintenance practices that maximize pollution control shall be followed. All necessary equipment control and operating devices, such as pressure gauges, amp meters, volt meters, flow rate indicators, temperature gauges, continuous emissions monitoring systems, etc., shall be installed, operated properly and easily accessible to compliance inspectors. A copy of all manufacturers' operating instructions for pollution control equipment and pollution emitting equipment shall be kept on site. These instructions shall be available to all employees who operate the equipment and shall be made available to compliance inspectors upon request. Maintenance records shall be made available to the Executive Secretary or Executive Secretary's representative upon request.. [Authority granted under R307-401-5; condition originated in DAQE-AN0348004-04]

II.B.1.b.1 **Monitoring:**

A maintenance log that documents prescribed operation and maintenance actions shall be maintained. Unscheduled maintenance and actions to correct breakdowns and malfunctions shall be documented with a problem description, corrective action, and equipment performance following repair

II.B.1.b.2 **Recordkeeping:**

Permittee shall document activities performed to assure proper operation and maintenance. Records shall be maintained in accordance with Provision I.S.1 of this permit.

II.B.1.b.3 **Reporting:**

There are no reporting requirements for this provision except those specified in Section I of this permit.

II.B.2 **Conditions on Three 14.3 MW Gas Turbines (Unit Gas Turbines)**

II.B.2.a **Condition:**

Emissions of NO_x from each of the gas turbine exaust stacks shall be no greater than 25 ppmdv (24 operating hour average, 15% O_2, dry). Hours for which no power is generated

are not included in the operating hour average. Startup and shutdown periods are excluded. [Authority granted under DAQE-AN0348004-04 and R307-401-6(1) [BACT]; condition originated in DAQE-AN0348004-04]

II.B.2.a.1 **Monitoring:**

(a) The permittee shall install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO_x and O_2 monitors. As an alternative, a CO_2 monitor may be used to adjust the measured Nox concentrations to 15 percent O_2 by using the CO_2 readings to make the adjustments, as described in Method 20. The CEMS shall be installed, certified, maintained and operated as follows:

(1) Each CEMS must be installed and certified according to PS 2 and 3 (for diluent) of 40 CFR part 60, appendix B, except the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO_x and diluent monitors may be performed individually or on a combined basis, i.e., the relative accuracy tests of the CEMS may be performed either:

(i) On a ppm basis (for NO_x) and a percent O_2 basis for oxygen; or

(ii) On a ppm at 15 percent O_2 basis; or

(iii) On a ppm basis (for NO_x) and a percent CO_2 basis (for a CO_2 monitor that uses the procedures in Methor 20 to correct the Nox data to 15 percent O_2).

(2) As specified in 40 CFR 60.13(e)(2), during each full unit operating hour, each monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour.

(3) For purposes of identifying excess emissions, CEMS data must be reduced to hourly averages as specified in 40 CFR 60.13(h).

(i) For each unit operating hour in which a valid hourly average, as described in paragraph (a)(2) of this section, is obtained for both NO_x and diluent, the data acquisition and handling system must calculate and record the hourly NO_x emissions in the units of percent NO_x by volume, dry basis, corrected to 15 percent O_2 and International Organization for Standardization (ISO) standard conditions (if required as given in 40 CFR 60.335(b)(1)). For any hour in which the hourly average O_2 concentration exceeds 19.0 percent O_2, a diluent cap value of 19.0 percent O_2 may be used in the emission calculations.

(ii) A worst case ISO correction factor may be calculated and applied using historical ambient data. For the purpose of this calculation, substitute the maximum humidity of ambient air (Ho), minimum ambient temperature (Ta), and minimum combustor inlet absolute pressure (Po) into the ISO correction equation.

(b) The quality assurance requirements of R307-170, Continuous Emission Monitoring Systems Program shall be used. (origin: 40 CFR 60 GG and R307-401-6 (BACT))

II.B.2.a.2 **Recordkeeping:**

Results of NO_x monitoring shall be recorded and maintained as required in R307-170, 40 CFR 60 subpart GG, and as described in Provision I.S.1 of this permit.

II.B.2.a.3 **Reporting:**

The permittee shall comply with the reporting provisions in R307-170-9 and all the reporting provisions contained in Section I of this permit.

The quarterly reports required in R307-170-9 are considered prompt notification of permit deviations required in Provision I.S.2.c of this permit if all information required by Provision I.S.2.c is included in the report.

II.B.2.b **Condition:**

Emissions of NO_x from each of the gas turbine exaust stacks shall be no greater than 95 ppmdv (4 hour average, 15% O_2, dry). Periods of startup, shutdown and malfunction shall be included in the calculations. [Authority granted under 40 CFR Part 60 (Subpart GG); condition originated in 40 CFR Part 60 (Subpart GG)]

II.B.2.b.1 **Monitoring:**

(a) The permittee shall install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO_x and O_2 monitors. As an alternative, a CO_2 monitor may be used to adjust the measured Nox concentrations to 15 percent O_2 by using the CO_2 readings to make the adjustments, as described in Method 20. The CEMS shall be installed, certified, maintained and operated as follows:

(1) Each CEMS must be installed and certified according to PS 2 and 3 (for diluent) of 40 CFR part 60, appendix B, except the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO_x and diluent monitors may be performed individually or on a combined basis, i.e., the relative accuracy tests of the CEMS may be performed either:

(i) On a ppm basis (for NO_x) and a percent O_2 basis for oxygen; or

(ii) On a ppm at 15 percent O_2 basis; or

(iii) On a ppm basis (for NO_x) and a percent CO_2 basis (for a CO_2 monitor that uses the procedures in Methor 20 to correct the Nox data to 15 percent O_2).

(2) As specified in 40 CFR 60.13(e)(2), during each full unit operating hour, each monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour.

(3) For purposes of identifying excess emissions, CEMS data must be reduced to hourly averages as specified in 40 CFR 60.13(h).

(i) For each unit operating hour in which a valid hourly average, as described in paragraph (a)(2) of this section, is obtained for both NO_x and diluent, the data acquisition and handling system must calculate and record the hourly NO_x emissions in the units of percent NO_x by volume, dry basis, corrected to 15 percent O_2 and International Organization for Standardization (ISO) standard

conditions (if required as given in 40 CFR 60.335(b)(1)). For any hour in which the hourly average O_2 concentration exceeds 19.0 percent O_2, a diluent cap value of 19.0 percent O_2 may be used in the emission calculations.

(ii) A worst case ISO correction factor may be calculated and applied using historical ambient data. For the purpose of this calculation, substitute the maximum humidity of ambient air (Ho), minimum ambient temperature (Ta), and minimum combustor inlet absolute pressure (Po) into the ISO correction equation.

(b) The quality assurance requirements of R307-170, Continuous Emission Monitoring Systems Program shall be used. (origin: 40 CFR 60 GG and R307-401-6 (BACT))

II.B.2.b.2 **Recordkeeping:**

Results of NO_x monitoring shall be recorded and maintained as required in R307-170, 40 CFR 60 subpart GG, and as described in Provision I.S.1 of this permit.

II.B.2.b.3 **Reporting:**

The permittee shall comply with the reporting provisions in R307-170-9, 40 CFR Subpart GG and all the reporting provisions contained in Section I of this permit.

The permittee shall submit reports of excess emissions and monitor downtime, in accordance with 40 CFR 60.7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under 40 CFR 60.7(c), periods of excess emissions and monitor downtime that shall be reported are defined as follows:

(a) An hour of excess emissions shall be any unit operating hour in which the 4-hour rolling average NO_x concentration exceeds applicable NSPS emission standard of 95 ppmdv (15% O_2, dry). A ``4-hour rolling average NO_x concentration'' is the arithmetic average of the average NO_x concentration measured by the CEMS for a given hour (corrected to 15 percent O_2 and, if required under 40 CFR 60.335(b)(1), to ISO standard conditions) and the three unit operating hour average NO_x concentrations immediately preceding that unit operating hour.

(b) A period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour, for either NO_x concentration or diluent (or both).

(c) Each report shall include the ambient conditions (temperature, pressure, and humidity) at the time of the excess emission period. The ambient conditions is not required if the permittee opts to use the worst case ISO correction factor as specified in 40 CFR 60.334(b)(3)(ii).

(d) All reports of excess emissions and monitor downtime shall be postmarked by the 30th day following the end of each calendar quarter.

The quarterly reports required in R307-170-9 are considered prompt notification of permit deviations required in Provision I.S.2.c of this permit if all information required by Provision I.S.2.c is included in the report.

II.B.2.c **Condition:**

Emissions of CO from each gas turbine shall be no greater than 50 ppmdv (averaged over 3 hour test period). [Authority granted under R307- 401- 6(1) (BACT); condition originated in DAQE-AN0348004-04]

II.B.2.c.1 **Monitoring:**

Stack testing shall be performed as specified here:

(a) Frequency. The unit shall be tested at least once every three years. Tests may also be required at the direction of the Executive Secretary if the source is suspected to be in violation.

(b) Notification. At least 45 days prior to conducting any emission testing required under any part of UAC, R307, the owner or operator shall notify the Executive Secretary of the date, time and place of such testing and, if determined necessary by the Executive Secretary, the owner or operator shall attend a pretest conference. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary. The source test protocol shall be approved by the Executive Secretary prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary. The pretest conference shall include representation from the owner/operator, the tester, and the Executive Secretary.

(c) Sample Point. The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 20, or other methods as approved by the Executive Secretary. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

(d) Methods.

(1) 40 CFR 60, Appendix A, Method 10 shall be used to determine CO emissions;

(2) 40 CFR 60, Appendix A, Method 20 shall be used to determine volumetric flow rate.

(e) Calculations. To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary to give the results in the specified units of the emission limitation. In addition, ppm values shall be corrected to 15% oxygen.

Emissions average exclude turbine startups and shutdowns. (origin: R307-401-6 (BACT))

II.B.2.c.2 **Recordkeeping:**

Results of monitoring shall be maintained in accordance with Provision I.S.1 of this permit.

II.B.2.c.3 **Reporting:**

There are no reporting requirements for this provision except those specified in Section I of this permit.

II.B.2.d **Condition:**

Sulfur content of any fuel combusted shall be no greater than 0.05 percent by weight The permittee may develop a custom schedule for monitoring sulfur content. [Authority granted under 40 CFR 72.7 and 40 CFR 60 (Subpart GG); condition originated in 40 CFR 72.7(a)(3)]

II.B.2.d.1 **Monitoring:**

In lieu of monitoring the total sulfur content of gaseous fuel combusted in the turbines, the permittee should use one of the following sources of information to demonstrate that the gaseous fuel meets the definition of natural gas in 40 CFR 60.331(u):
(a) The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or
(b) Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to 40 CFR Part 75 is required.

II.B.2.d.2 **Recordkeeping:**

Results of monitoring shall be maintained in accordance with Provision I.S.1 of this permit.

II.B.2.d.3 **Reporting:**

There are no reporting requirements for this provision except those specified in Section I of this permit.

II.B.2.e **Condition:**

Visible emissions shall be no greater than 10 percent opacity. [Authority granted under R307-401-6(1) (BACT); condition originated in DAQE-AN0348004-04]

II.B.2.e.1 **Monitoring:**

Records required for this permit condition will serve as monitoring.

II.B.2.e.2 **Recordkeeping:**

In lieu of monitoring via visible emission observations, the permittee shall keep one of the following sets of records for each affected emission unit, as applicable:

(1) Documentation that the emission unit can only burn natural gas and/or liquified petroleum gas;
(2) Documentation that the fuels other than natural gas and/or liquified petroleum gas cannot be supplied to the emission unit without modification of the fuel supply system; or

(3) Fuel bills or fuel meter readings that demonstrate only natural gas and/or liquified petroleum gas are combusted in the emission unit.

The permittee shall keep a log which includes the location and description of each affected emission unit. For each affected emission unit the log shall include the type of records that will be used in lieu of monitoring via visible emission observations. If fuel bills or fuel meter readings will be used in lieu of monitoring via visible emission observations, the permittee shall review fuel bills or fuel meter readings once per quarter and record in the log the types of fuel combusted. The records and log required by this condition shall be maintained in accordance with Provision I.S.1 of this permit.

II.B.2.e.3 **Reporting:**

There are no reporting requirements for this provision except those specified in Section I of this permit.

II.B.2.f **Condition:**

The permittee shall comply with all applicable requirements of 40 CFR 60 Subpart A. [Authority granted under 40 CFR 60 (Subpart A); condition originated in 40 CFR 60 (Subpart GG)]

II.B.2.f.1 **Monitoring:**

The permittee shall comply with the monitoring requirements of 40 CFR 60.8(a), (b), (c), (e) and (f), and 60.11(a). (origin: 40 CFR 60 Subpart A)

II.B.2.f.2 **Recordkeeping:**

The permittee shall comply the recordkeeping requirements of provision I.S.1 of this permit and any additional recordkeeping requirements of 40 CFR 60.7(b), and 60.7(f). (origin: 40 CFR 60 Subpart A)

II.B.2.f.3 **Reporting:**

The permittee shall comply with the reporting requirements in Section I of this permit and the reporting and notification requirements of 40 CFR 60.4, 60.6(b), 60.7(a), 60.8(a) and (d), 60.15, and 60.19. (origin: 40 CFR 60 Subpart A)

II.B.3 **Conditions on Black Start Generator (Unit 11)**

II.B.3.a **Condition:**

Visible emissions shall be no greater than 20 percent opacity. [Authority granted under R307-401-6(1) [BACT]; condition originated in DAQE-AN0348004-04]

II.B.3.a.1 **Monitoring:**

A visual observation of each affected emission unit shall be performed once each month that the unit operates, by an individual trained on the observation procedures of 40 CFR 60, Appendix A, Method 9. The individual is not required to be a certified visible emissions observer (VEO). If any visible emissions are observed, an opacity determination of that emission unit shall be performed by a certified VEO in accordance with 40 CFR 60, Appendix A, Method 9 within 24 hours of the initial observation.

II.B.3.a.2 **Recordkeeping:**

Results of opacity observations shall be recorded and maintained as described in Provision S.1 in Section I of this permit.

II.B.3.a.3 **Reporting:**

There are no reporting requirements for this provision except those specified in Section I of this permit.

II.B.3.b **Condition:**

The generator shall be used for the gas turbines startup operations only during the periods when electric power from the public utilities is interrupted, or for regular maintenance of the generator. [Authority granted under R307- 401- 6(1) (BACT); condition originated in DAQE-AN0348004-04]

II.B.3.b.1 **Monitoring:**

Records required for this permit condition will serve as monitoring.

II.B.3.b.2 **Recordkeeping:**

Records documenting generator usage shall be kept in a log and they shall show the date the generator was used, the duration in hours of the generator usage, and the reason for the generator usage. Records shall be maintained as decribed in Provision S.1 in Section I of this permit.

II.B.3.b.3 **Reporting:**

There are no reporting requirements for this provision except those specified in Section I of this permit.

II.B.3.c **Condition:**

The permittee shall use only #1 or #2 or a combination of #1 and #2 diesel fuel in the generator. [Authority granted under R307- 401- 6(1) (BACT); condition originated in DAQE-AN0348004-04]

II.B.3.c.1 **Monitoring:**

Records required for this permit condition will serve as monitoring.

II.B.3.c.2 **Recordkeeping:**

The permittee shall maintain records of the types of fuel combusted. Records shall be maintained in accordance with Provision I.S.1.

II.B.3.c.3 **Reporting:**

There are no reporting requirements for this provision except those specified in Section I of this permit.

II.C. Emissions Trading.

(R307-415-6a(10))

Not applicable to this source.

II.D. Alternative Operating Scenarios.

(R307-415-6a(9))

Not applicable to this source.

Section III: PERMIT SHIELD

The following requirements have been determined to be not applicable to this source in accordance with Provision I.M, Permit Shield:

III.A. **40 CFR Part 68 and CAAA 112r (Risk Management Program / Accidental Release)**

This regulation is not applicable to the Propane Tanks (Unit 14) because This regulation does not apply to the propane tanks listed as emission unit 14 because the propane stored is utilized as a fuel at the facility. EPA made the exemption for these tanks in the March 2000 Federal Register.

Section IV: ACID RAIN PROVISIONS.

This source is not subject to Title IV. This section is not applicable.

REVIEWER COMMENTS

This operating permit incorporates all applicable requirements contained in the following documents:

DAQE-AN0348004-04	dated	May 10, 2004
Utah SIP Section IX.H.2.b.KK		dated December 18, 1992

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1. **Comment on an item originating in Utah SIP Section IX.H.2.b.KK regarding permitted source (Source-wide)**

   SIP Section IX.H.2.b.KK: Murray City Power's new AO (DAQE-AN0348004-04) supercedes the entire Utah SIP section IX.H.B.KK.

   The four IC engines listed in the SIP are no longer used to generate power. CEMs have also been installed at the power plant. [Comment last updated on 6/16/2004]

2. **Comment on an item originating in SIP Section IX.H.2.a.N regarding permitted source (Source-wide)**

   Sulfur content requirement: Utah Air Conservation Rule, R307-203-1 and SIP Section IX.H.2.a.N require that sulfur content of any fuel oil be no more than 0.85 lbs/MMBtu, which is equivalent to 1.69% by weight if heating value (140,000 Btu/gal) and density (7.05 lb/gal) of distillate oil given in AP-42 are used to make conversion. Sulfur content limit of 0.5 % by weight in the permit is more stringent than the rule requirement [Comment last updated on 1/07/1999]

3. **Comment on an item originating in 40 CFR 60 Subpart GG regarding Three 14.3 MW Gas Turbines (Unit Gas Turbines)**

   Subpart GG NO_x Standard and NO_x limit in AO: The NOX standard in Subpart GG is:

   $$STD = 0.0075 (14.4)/Y + F$$

   where:
   STD= allowable NOX emissions (percent by volume at 15 percent oxygen and on a dry basis
   Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.
   F = NO_x emission allowance for fuel-bound nitrogen.

   EPA guideline document EMTIC, GD-009 advises to use zero for the value of F for gas turbines that burn only pipeline-quality natural gas. So, the lowest NOX limit is 0.0095 percent by volume when Y=11.4. NOX limit in AO is 25 ppmdv or 0.0025 percent by volume which is more stringent than the Subpart GG standard.

Both the NSPS standard and the BACT standard have been included in the Title V permit because they have different time frames for measurement. The NSPS limit does not have an averaging time and is therefore a limit that is never to be excceeded. The BACT limit has an averaging time of 24 operating hours. [Comment last updated on 11/03/2004]

4. **Comment on an item originating in 40 CFR 60 Subpart GG regarding Three 14.3 MW Gas Turbines (Unit Gas Turbines)**

   Subpart GG requirement for the monitoring of fuel-bound nitrogen content of fuel: Subpart GG requires the monitoring of the fuel-bound nitrogen. The pipeline quality natural gas usually has no fuel-bound nitrogen. EPA guideline document, EMTIC GD-009 indicates that there is no good test method to distinguish between fuel-bound nitrogen and other forms of nitrogen such as dissolved air, in fuels used in gas turbines. A Memorandum from EPA Headquarters dated August 14, 1987 regarding Authority for Approval of Custom Fuel Monitoring Schedules Under NSPS Subpart GG states that nitrogen monitoring can be waived for pipeline quality gas since there is no fuel-bound nitrogen and since free nitrogen does not contribute appreciably to NOX emissions. Therefore, Subpart GG requirement for fuel-bound nitrogen content monitoring is not incorporated into the permit. [Comment last updated on 4/17/2001]

5. **Comment on an item originating in 40 CFR 60 Subpart GG regarding Three 14.3 MW Gas Turbines (Unit Gas Turbines)**

   Subpart GG requirement related to water injection and emergency fuel: Turbines have low NOX burners to control NOX emissions and there is no water injection. Also, this source does not use an emergency fuel. Therefore, the associated requirements with water injection and emergency fuel in Subpart GG do not apply to the turbines. [Comment last updated on 4/17/2001]

6. **Comment on an item originating in 40 CFR 60 Subpart GG regarding Three 14.3 MW Gas Turbines (Unit Gas Turbines)**

   Sulfur content of any fuel burned in any stationary gas turbine: Subpart GG requires that sulfur content in the fuel shall be 0.8 percent or less by weight. This limit is less stringent than the sulfur content limit of 0.05 percent by weight or less required by 40 CFR 72.7 (a)(3). Therefore, Subpart GG sulfur standard is subsumed in the 40 CFR 72.7 (a)(3). [Comment last updated on 6/17/2004]

7. **Comment on an item originating in 40 CFR 60 Subpart GG regarding Three 14.3 MW Gas Turbines (Unit Gas Turbines)**

   Sulfur content of any fuel burned in any stationary gas turbine: The facility will be in compliance with the limit of 0.05 percent sulfur by weight as long as it burns pipeline quality natural gas only. The piping in the facility is set up in a way as to only allow pipeline quality natural gas to be combusted in the gas turbines. [Comment last updated on 9/21/2004]

8. **Comment on an item originating in DAQE-AN0348004-04 regarding permitted source (Source-wide)**

   Sulfur Content of Fuel Oil: Condition 18 of the Approval Order has been subsumed into the limit of burning only diesel fuel #1 or #2 which by definition has a sulfur content not exceeding 0.5% percent by weight sulfur. [Comment last updated on 9/01/2004]